Claims

1. A detector for detecting thermal radiation in multiple coverage zones, said detector comprising:

a support structure;

a first thermal detection sensor coupled to the support structure and arranged to detect thermal energy in a first coverage zone;

a second thermal detection sensor coupled to the support structure for detecting thermal energy in a second coverage zone; and

an optical lens coupled to the support structure and arranged to direct thermal energy from the first coverage zone to the first thermal detection sensor and to direct thermal energy from the second coverage zone to the second thermal detection sensor.

2. The detector as defined in claim 1, wherein each of the first and second thermal detection sensors comprises an infrared sensor.

3. The detector as defined in claim 2, wherein the infrared sensor comprises a thermopile sensor.

4. The detector as defined in claim 1, wherein the support structure comprises a conductive heat sink thermally coupled to the first and second thermal detection sensors.

5. The detector as defined in claim 4, wherein the heat sink is further coupled to the optical lens, and wherein the heat sink maintains the first and second thermal detection sensors substantially at the same temperature.

6. The detector as defined in claim 4, wherein the first and second thermal detection sensors are coupled to the heat sink via a thermally conductive adhesive.

7. The detector as defined in claim 1, wherein the support structure comprises a chamber having interior walls extending from each of the first and second thermal detection sensors to the optical lens.

8. The detector as defined in claim 7, wherein the interior walls comprise an infrared absorbing material.

9. The detector as defined in claim 1, wherein the detector is located on a vehicle.

10. The detector as defined in claim 9, wherein the detector detects one or more objects in a blind spot region of the vehicle.

11. A detector for detecting thermal radiation in multiple coverage zones, said detector comprising:

a support structure;

a first thermal sensor detection coupled to the support structure and arranged to detect thermal energy in a first coverage zone;

a second thermal detection sensor coupled to the support structure for detecting thermal energy in a second coverage zone; and

an optical lens coupled to the support structure and arranged to direct thermal energy from the first coverage zone to the first thermal detection sensor, and to direct thermal energy from the second coverage zone to the second thermal detection sensor, wherein the support structure comprises a heat sink.

12. The detector as defined in claim 11, wherein each of the first and second thermal detection sensors comprises an infrared sensor.

13. The detector as defined in claim 12, wherein the infrared sensor comprises a thermopile sensor.

14. The detector as defined in claim 11, wherein the heat sink is thermally coupled to the optical lens and the first and second thermal detection sensors to substantially uniformly distribute heat.

15. The detector as defined in claim 11, wherein the first and second thermal detection sensors are coupled to the heat sink via a thermally conductive adhesive.

16. The detector as defined in claim 11, wherein the support structure comprises interior walls extending from the first and second thermal detection sensors to the optical lens and defining a chamber, wherein the interior walls comprise an infrared absorbing material.

17. The detector as defined in claim 11, wherein the detector is located on a vehicle.

18. The detector as defined in claim 17, wherein the detector detects one or more objects in a blind spot region of the vehicle.

19. A method of detecting thermal energy in multiple coverage zones, the method comprising the steps of:

providing a thermal detector having first and second thermal detection sensors and an optical lens for directing thermal energy from first and second coverage zones to the first and second thermal detection sensors;

detecting a first temperature in the first coverage zone with the first thermal detection sensor, wherein thermal energy passes through the optical lens to the first thermal detection sensor; and

detecting a second temperature in the second coverage zone, wherein thermal energy passes through the optical lens to the second thermal detection sensor.

20. The method as defined in claim 19 further comprising the steps of processing the first and second temperatures to determine the presence of a thermal emitting object.

21. The method as defined in claim 19 further comprising the step of substantially uniformly distributing heat throughout the detector with a heat sink.

22. The method as defined in claim 19 further comprising the step of absorbing stray infrared radiation via an infrared absorbing material.

23. The method as defined in claim 19, wherein the first and second coverage zones are in a region relative to a host vehicle.

24. The method as defined in claim 23 further comprising the step of detecting one or more objects in a blind spot region of the vehicle.